

WHAT IS CLAIMED IS:

1. A network device configured to control communication of data frames between stations, comprising:

- a plurality of receive ports configured to receive data frames from the stations;
- a memory configured to store address information and data forwarding information associated with the received data frames, the address information and data forwarding information being stored as a plurality of entries in a first address table;
- 5 a timer configured to transmit a signal at a predetermined interval of time, the predetermined interval of time defining an aging cycle associated with the first address table;
- an aging device configured to receive the signal from the timer and initiate an aging process on the first address table; and
- interrupt logic configured to receive the signal from the timer and transmit an interrupt signal to an external device, the interrupt signal indicating that the aging process on the first address table has been initiated.

2. The network device of claim 1, wherein the external device stores a second address table corresponding to the first address table stored in the memory of the network device, and in response to receiving the interrupt signal, the external device initiates an aging process on the second address table.

3. The network device of claim 1, wherein each entry in the first address table includes an address hit field and an aging override field and the aging device is further configured to:

- 5 examine each of the entries in the first address table and determine whether to at least one of delete and invalidate an entry based on the address hit field and aging override field.

4. The network device of claim 3, wherein the external device stores a second address table corresponding to the first address table, each entry in the second address table including an address hit field and an aging override field, the external device being configured to:

5 determine whether to at least one of delete and invalidate an entry in the second address table based on the address hit field and the aging override field.

5. The network device of claim 1, wherein the timer is programmable.

6. The network device of claim 1, wherein the aging process performed on the first address table is substantially synchronized with an aging process performed on a second address table stored in the external device.

7. The network device of claim 1, wherein the aging device comprises an aging state machine that performs a hardware-controlled aging process on the first address table; and wherein the external device comprises a processor and a memory storing a second address table corresponding to the first address table and the processor performs a software-controlled aging process on the second address table.

5 8. A method comprising:

storing information in a memory of a network device, the information being stored as a plurality of entries in a first address table in the memory, each entry including address information and data forwarding information;

5 receiving data frames on a plurality of receive ports of the network device;

initiating an aging process on the first address table at predetermined intervals of time; and

transmitting a signal to an external device at the predetermined intervals of time, the signal indicating that the aging process on the first address table has been initiated.

9. The method of claim 8, wherein the external device stores a second address table corresponding to the first address table, the method further comprising:

receiving the signal at the external device; and

initiating an aging process on the second address table, in response to the received

5 signal.

10. The method of claim 9, wherein the aging process performed on the first address table is substantially synchronized with the aging process performed on the second address table.

11. The method of claim 8, wherein the external device stores a second address table corresponding to the first address table, the method further comprising:

modifying the first address table based on the received data frames;

monitoring, by the external device, the modifications to the first address table; and

5 updating the second address table based on the modifications to the first address table.

12. The method of claim 11, wherein the modifying includes:

setting a hit bit in a first entry in the first address table when information included in a received data frame matches the information in the first entry.

13. The method of claim 8, wherein each entry in the first address table includes an address hit field and an aging override field, the method further comprising:

reading each entry in the first address table; and

determining whether to at least one of invalidate and delete an entry based on the

5 address hit field and the aging override field.

14. The method of claim 13, further comprising:

storing a second address table in the external device, the second address table

corresponding to the first address table, each entry in the second address table including an address hit field and an aging override field; and

5 determining whether to at least one of invalidate and delete an entry in the second address table based on the address hit field and the aging override field.

15. A system comprising:

a network device configured to receive data frames from a plurality of stations and generate frame forwarding information for the received data frames, the network device comprising:

a first memory configured to store address information and data forwarding information associated with the received data frames, the address information and data forwarding information being stored as a plurality of entries in a first address table,

10 a timer configured to transmit a time-out signal at predetermined intervals of time, the predetermined intervals defining an aging cycle,

an aging mechanism configured to receive the time-out signal and, in response to receiving the time-out signal, initiate an aging process on the first address table, and

15 a logic device configured to receive the time-out signal and, in response to receiving the time-out signal, transmit an interrupt signal; and

a processing device located externally from the network device, the processing device

15 comprising:

a second memory configured to store a second address table corresponding to the
first address table, and

a processor configured to receive the interrupt signal from the logic device

and, in response to receiving the interrupt signal, initiate an aging process on the second

20 address table.

16. The system of claim 15, wherein the aging process performed on the first address

table is substantially synchronized with the aging process performed on the second address
table.

17. The system of claim 15, wherein the aging mechanism comprises an aging state
machine that performs a hardware-controlled aging process on the first address table and the
processor performs a software-controlled aging process on the second address table.

18. The system of claim 15, wherein the aging mechanism and the logic device receive
the time-out signal at substantially the same time.